FINAL REPORT

Pilot And Meteorologist Internship Programs

2015 North Dakota Cloud Modification Project

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The Pilot Internship Program (PIP) and the Meteorology Internship Program (MIP) are designed to prepare qualified students for a professional career through participation in a summer intern position with the North Dakota Atmospheric Resource Board (NDARB) during the North Dakota Cloud Modification Project (NDCMP).

The Atmospheric Resource Board in cooperation with the University of North Dakota's John D. Odegard School of Aerospace Sciences (UND) have long recognized their shared roles in providing appropriate experience for students and young professionals. During the 2015 NDCMP, twelve qualified young people worked as interns on a full-time basis. The NDARB internships are an important milestone for the students, enabling them to gain unique insight and experience and to have important responsibility directly in their field of interest. NDARB constantly seeks to improve its training process and the entire internship experience. The knowledge and skills acquired by the students enhance the development and stature of an emerging workforce.

1.1 History

The NDCMP Pilot Internship Program began in 1976 with early funding by the Bureau of Reclamation through the University of North Dakota. By the mid-1980's, the Bureau of Reclamation ceased to fund the program. The NDARB continued funding the program until 2003, when funding was no longer available. The Board did continue the program by making internships available, however, only on a volunteer basis. Funding was restored for the program during the 2005 Legislative Assembly.

A Memorandum of Understanding between NDARB and UND outlines the responsibilities of both entities to create an opportunity to prepare students for a professional career through participation in a summer intern position. Specific criteria are required to be eligible for the PIP. At the completion of the 2015 program, the program has provided training and experience for 352 pilots.

The NDCMP Meteorology Internship Program began in 1996 and to date has provided hands-on radar, operations and forecasting experience for 50 meteorology undergraduates and graduates.

2.0 Program Description

The following presents an outline of the program, its objectives, design, and main delivery components.

2.1 Program Objectives

- Encourage students to expand their education beyond the classroom.
- Enable students to sample actual situations and prepare for Pilot-In-Command (PIC) and Radar Meteorologist duties.
- Develop professional work habits and improve interpersonal skills of students.
- Establish a pool of potential professional employees who have demonstrated their abilities to assume in-command responsibilities.

2.2 Qualifications

Candidates for the MIP must be at least an undergraduate pursuing a degree in meteorology or atmospheric sciences. Applicants must apply and are scored and rated for selection by NDARB.

Selection criteria for the PIP includes:

- Ratings: must have multi-engine commercial instrument rating completed by April 30.
- Motivation: class attendance, extra credit work, and overall enthusiasm for fieldwork.
- GPA: Must complete the Applied Weather Modification class.
- Flight hours: total and multi-engine time.
- Related work experience.

UND has established a policy that students participating in the PIP must obtain their multi-engine rating at UND. A student who has earned his or her rating prior to enrolling at the university will be required to take a check ride.

This policy is to ensure the quality of the ratings and pilots who will be representing UND through the PIP. This allows for a measure of quality control to reduce the risk of accidents or incidents that would reflect poorly on this program.

2.3 Program Design

The PIP is designed for the primary benefit of the persons placed on the program including: multi-engine flight hours (number of hours dependent on weather conditions), IFR and adverse weather flight experience, and operations experience for future employment as weather modification Pilots-In-Command (PIC).

The MIP is designed for the primary benefit of providing hands-on radar experience, real-time weather observations, weather forecasting experience, and operations experience for future employment as weather modification radar meteorologists.

The programs are designed for positive, active involvement of the interns. The decision whether or not to allow each pilot intern to fly the airplane (from left or right seat) rests with the PIC. In the case of the MIP, the supervising Radar Meteorologist determines when a meteorologist intern is qualified to run operations during a mission. It is most beneficial if the interns receive direct, hands-on experience. In general, the assignment of each intern is to learn the duties of his/her supervisor/mentor. This includes the following areas of involvement:

- Conduct of seeding missions according to project guidelines.
- Detailed record keeping of all missions.
- Seeding equipment maintenance.

- Visual surveillance of the weather.
- Representing the project to the public.
- Duties that will meet project objectives as directed by NDARB.

2.4 Support and Supervision

The NDCMP is a 24/7 project for 92 days, or longer, and ongoing communications are vital. Each intern was assigned a Supervisor/Mentor who offered guidance, inside information, encouragement and general counsel. An "always-available" policy enabled the interns' access to individuals at any time for answers to questions, accept feedback, and help with project objectives. This policy created an environment in which the interns felt comfortable asking questions, and aided in keeping the interns productive, no matter what time of the day or night.

2.5 Orientation & Pre-project Training

Orientation and training were accomplished through the ND Cloud Modification Project Ground School held on May 27 through 29, 2015. All project personnel, including interns, were required to attend. During Ground School, the interns received information that clarified their specific tasks and roles in the NDCMP, including operations, policy, rules and regulations.

2.6 Accountability

On a daily basis, participants were required to document the number of hours worked on our web-based time system. At the end of the workweek, the supervising PICs or meteorologists reviewed, commented and approved the interns' hours, which were forwarded to NDARB via email. The comments served to track performance and the time entry provided a database of official hours worked for Fair Labor Standards Act and payroll purposes.

Kelli Schroeder, Executive Staff Officer/Business Manager, Mark Schneider, Chief Meteorologist, and Darin Langerud, Director, made multiple visits to field locations to check on quantity and quality of work, receive and make suggestions and criticisms, and consider adjustments to the program.

2.7 Continuing Development

Participants were encouraged to become involved in networking with NDARB and contractor employees. Sharing information on work experiences and performance is critical to the professional development and growth of the individual. Feedback on the intern's progress was provided as a professional development tool and to provide clarification of NDARB's expectations of what constitutes quality performance on the job.

Approximately two months into the internship, the supervisors/mentors evaluated the participants and discussed the results with them. The interns were asked to evaluate the internship program. The business manager and chief meteorologist then visited with each intern and offered comments and

critical suggestions for improvement and further development. At this time, comments were also received from the interns regarding possible changes and improvements to the program for the future.

2.8 Legal Considerations

Interns of the NDARB are temporary unclassified employees and were paid at the rate of $13.25/hour. The NDARB workweek is from Monday at 12:00 a.m. to Sunday at 12:00 midnight. Any overtime hours worked within the workweek required prior authorization. Internship employees were covered under the agency's Workforce Safety policy.

3.0 Program Information

During the 2015 NDCMP, the 9 PIP interns worked a total of 2,462.5 hours. These hours were spent at weather briefings, operations flight missions, chemical mixing and inventory, record keeping, aircraft and seeding equipment maintenance, standby prior to launch, and public relations.

Intern pilots are rotated through the Williston location to give all a chance to experience high-altitude turbo-prop aircraft operations.

The 3 MIP interns worked a total of 1,283.5 hours. These hours were spent at weather briefings, forecasting, assisting with operations flight missions, radar watch, record keeping, and public relations. All project personnel are responsible for "weather watch" at all times during the project.

Each intern meteorologist was given the opportunity to rotate through the two radar locations and also through the NDARB office. This would give each intern a chance to experience operations in each district and also gain forecasting experience. However, only one of the interns opted to rotate through all 3 sites and one rotated through Bismarck and Bowman. The last intern experienced all 3 sites last year.

The majority of intern participants had completed their internship and left the project by mid-August to return to college.

4.0 2015 Participants

Pilot Interns & Field Site:
Thomas Walsh, Seed 1, Bowman, ND
Paul Smith, Seed 2, Bowman, ND
Austin Rennard, Seed 4, Stanley, ND
Jason Bensley, Seed 5, Watford City, ND
Chris Caplette, Seed 6, Watford City, ND
Eric Dragonetti, Seed 7 Rover, Williston, ND
Tanner Hoover, Seed 8, Kenmare, ND
Jonathan Wollman, Seed 9, Minot, ND
Zachary Santee, Vacation Rover

Meteorologist Interns & Field Site:
Kellee Judy, Bismarck, ND
Clint Leeper, Stanley, ND
Brittany Tague, Bowman, ND

5.0 Recommendations

The following are recommendations from students for consideration for future efforts:

5.1 Meteorology Internship Program

- Help forecaster find more work for afternoons.
- Help Bowman and Stanley interns find more work during slow times.
- Go back to rotating interns through all sites.

5.2 Pilot Internship Program

- Rotate through the radar locations to see things from that perspective.
- Create a way to make mixing chemical easier.
- Ride along with PICs during practice flights during Ground School.
- Rotate through the Cessna 340s for more top-seeding experience.
- Have interns and PICs meet in Fargo or Grand Forks before Ground School.
- Address the housing situation earlier than May and send photos to staff.

6.0 Acknowledgements

NDARB wishes to thank the Radar Meteorologists and Pilots-In-Command for their efforts and assistance in serving as supervisors and mentors during the 2015 NDCMP Internship Programs. They are:

Maggie Christopher, Radar Meteorologist, Bowman; Alex Edwards and James Telken, Radar Meteorologists, Stanley; Vadim Alekseev, Seed 1, Bowman; Steffany Royal, Seed 2, Bowman; Christian Mohan, Seed 4, Stanley; Daniel Sieh, Seed 5, Watford City; Brandon Thurston, Seed 6, Watford City; Mark Baltimore, Seed 7, Williston; Arthur Cifarelli, Seed 8, Kenmare; and Steven Kellerman, Seed 9, Minot.

NDARB also appreciates the efforts of Mr. Michael Poellot, UND John D. Odegard School of Aerospace Sciences, and Mr. Hans Ahlness, Vice President of Operations, Weather Modification, Inc.

We would also like to congratulate Thomas Walsh, recipient of the 2015 Outstanding Intern Award for his dedication to the program, hard work and ambition.

7.0 Attachments

- Intern Performance Evaluation
- Evaluation of Meteorology and Pilot Internship Program

ND Cloud Modification Project
Intern Performance Evaluation

Intern Name:	

The evaluating supervisor will complete the evaluation. We urge that each supervisor evaluate the intern's performance together with him/her. Please be candid. This joint evaluation is of paramount importance to the intern's professional and personal development. The evaluation will be a guide for counseling the intern. Additional space is provided for your comments. Please comment on any evaluation marked marginal or unsatisfactory.

Please place an "X" in the appropriate column for each characteristic.

Characteristics	Excellent	Very good	Average	Marginal	Unsatisfactory
Desire and willingness to take on new assignments					
Potential for further development					
Concern for needs of fellow employees					
Willingness to work through an assignment to completion					
Ability to communicate					
Quality of work					
Dependability					
Attitude (application to work)					
Attendance					
On-time					
Judgment					
Imaginativeness and resourcefulness					
Cooperation – willingness to get along with others					
Technical skills					
Interpersonal skills – general public					

Intern Name:	

Narrative appraisal of performance:

Additional comments and/or recommendations:

I understand that this intern will have access to the information in this evaluation and that it is a public record. I have discussed this evaluation with the intern.

_____

Signature (typed signature is acceptable)

_____

Date

ND Cloud Modification Project Internship Program Evaluation

Evaluation of: (Please place "X" in the first column and appropriate row.)

	Meteorology Internship Program
	Pilot Internship Program

This evaluation will be very important in determining the value of your work experience, both for yourself and for students who may wish to follow you in the same situation. The evaluation should be honest and indicate problems as well as your progress during the period. Please address your evaluative remarks so that your coordinator can discuss them with the organization to improve and maintain the program.

1. In what ways did your classes prepare you for your internship?

2. What other courses and/or work experience do you think would have helped you with this internship?

3. What was the most helpful thing your supervisor did to make you feel comfortable as a staff member?

4. In what manner has this assignment contributed to your professional development?

5. Prior to beginning your job, did the agency give you adequate information to start your project?

6. Do you consider the Internship Program relevant and meaningful to your short/long-term career interests?

7. List three things you plan to do differently as a result of this program.

8. Check the statement that best describes your answer.

A. How would you rate the educational value of your internship? (Please place an "X" in the first column and appropriate row.)

	Exceptional opportunity.
	Worthwhile experience.
	Generally not too useful, but might help some.
	Probably of no value (please comment).

Comments:

B. How was the experience related to your major field or career goals?

	Very closely related.
	Related through occasional assignments.
	No relationship exists.
	Not applicable (please comment).

Comments:

C. To what degree do you feel other employees supported the internship program?

	Atmosphere was openly supportive.
	Accepted, but not openly supportive.
	Generally not accepted or understood.
	Non-supportive and potentially hostile.
	Does not apply (please comment).

Comments:

D. How would you rate your salary in relation to requirements of position, your experience, and your academic level?

	Position paid comparably to full-time employees.
	Position well paid.
	Definitely underpaid for service expected.
	Does not apply (please comment).

Comments:

E. Were the actual duties of the position commensurate with the job description?

	Experience closely matches that offered.
	Experience mostly matches that offered.
	Little relationship exists.
	Extremely unsatisfactory (please comment).

Comments:

F. How did your technical skills apply to the position?

	Were more than adequate.
	Were adequate.
	Were less than they should have been.

Comments:

G. Did you receive a proper job orientation?

	Complete, accurate.
	Somewhat related.
	Had no meaning.
	Does not apply.

Comments:

H. Evaluate your supervisor's willingness and capability of answering questions.

	Exceeded expectations.
	Met expectations.
	Less than expected.

Comments:

I. Evaluate your supervisor's availability when needed for questions, etc.

	Exceeded expectations.
	Met expectations.
	Less than expected.

Comments:

J. Evaluate your supervisor's receptiveness to new ideas you might have had?

	Exceeded expectations.
	Met expectations.
	Less than expected.

Comments:

K. How would you rate your relationship with supervisor?

	Exceeded expectations.
	Met expectations.
	Less than expected.

Comments:

9. What changes, if any, would you recommend in your internship?

10. What other areas of experience would you like to acquire through this internship?

OVERALL RATING: (Please place an "X" in the first column and appropriate row.)

	Excellent
	Very Good
	Average
	Marginal
	Unsatisfactory

The second part of the evaluation requires a narrative evaluation of the work that was done during the internship. Please include in the narrative the following topics:

1) The role your position plays in the overall goals and mission of the project.
2) Relationship of the position to the organization's structure.
3) Academic classes that prepared you or fell short of preparing you for the job.
4) Problem-solving techniques used.
5) Communication skills used.
6) Leadership skills used.
7) Decision-making skills used.
8) Administrative skills used.
9) Agency staff assistance.
10) Success and failure experienced.
11) Any recommendations.

Any photos, articles, etc. may be included with the evaluation. Please indicate properly the source of all such material.

I understand this evaluation and narrative will be used to evaluate the Internship program and is a public record.

_____
Signature (Typed signature is acceptable.)

_____
Date